

COMPOUNDS AND METHODS FOR DIAGNOSTIC IMAGING AND THERAPY

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Abstract of the Invention

Compounds comprising a diagnostic or therapeutic moiety can be retained inside a cell by conjugating the moiety to at least one PNA that is targeted to the transcripts from a gene of interest. The diagnostic or therapeutic moiety is also conjugated to at least one targeting moiety specific for an extracellular receptor or other cell surface molecule. The

10 targeting moiety binds to the surface of a cell, and the entire compound is then internalized. Once inside the cell, the PNA portion of the diagnostic or therapeutic compound binds to RNA transcripts in a sequence specific manner. Binding of the PNA to its target RNA transcript retains the compound within the cell. The PNA can be designed to bind to a predetermined nucleic acid sequence from an RNA transcript, for example a mutated or

15 overexpressed sequence that is characteristic of a pathological state.